REMARKS

This is in full and timely response to the non-final Office Action mailed on August 20, 2002. Reexamination in light of the amendments and the following remarks is respectfully requested.

Claims 22-49 are currently pending in this application, with claims 22, 32 and 41 being independent.

No new matter has been added.

Priority

The Office Action includes a statement regarding the benefits of an earlier application. Further clarification is respectfully requested.

Information Disclosure Statement

An Information Disclosure Statement, along with a PTO-form 1449, has been filed on May 3, 2001. Acknowledgement of receipt of the previously filed Information Disclosure Statement is respectfully requested.

Title

As requested by the Examiner, a new title has been provided.

Rejection under 35 U.S.C. §103 and §112

Claims 13-21 were rejected under 35 U.S.C. §103 and §112.

These rejections are traversed at least for the following reasons.

While not conceding the propriety of this rejection, and in order to further the prosecution of the application, claims 13-21 have been canceled without prejudice or disclaimer of its underlying subject matter, rendering moot this rejection as to claims 13-21.

Withdrawal of this rejection is respectfully requested.

Newly added claims

Within the newly added claims the manufacturing substrate is of an inorganic material and the product substrate is one of an organic material and a metal. The product substrate is between

the device and the manufacturing substrate, wherein the manufacturing substrate is removed to expose the product substrate, thereby leaving the product substrate and the device.

U.S. Patent No. 5,475,515 issued to Yoshinaga et al. (Yoshinaga) arguably teaches substrates 101, 101a formed from glass or plastic (column 5, lines 12-13), and arguably teaches electrodes 102, 102a (column 5, line 36).

Nevertheless, Yoshinaga fails to disclose, teach or suggest a manufacturing substrate of an inorganic material and a product substrate one of an organic material and a metal, wherein the product substrate is between the device and the manufacturing substrate, and wherein the manufacturing substrate is removed to expose the product substrate, thereby leaving the product substrate and the device.

Figure 3 of U.S. Patent No. 5,940,154 issued to Ukita et al. (Ukita) cited by the Examiner as prior art made of record and not replied upon, arguably teaches glass substrate 1 and plastic film 3 (column 9, lines 12-15).

However, Ukita fails to disclose, teach or suggest a manufacturing substrate adjacent the first side the product substrate, wherein manufacturing substrate being closer to the

first side than to the second side.

U.S. Patent No. 5,476,810 issued to Curran, cited by the Examiner as prior art made of record and not replied upon, arguably teaches glass or plastic substrate 20 (column 5, lines 16-17) and metal substrate 10, 13 (column 5, lines 48 and 56-58).

Yet, Curran fails to disclose, teach or suggest a manufacturing substrate adjacent a first side of a product substrate and a device adjacent a second side of the product substrate, wherein the product substrate is between the device and the manufacturing substrate.

Allowance of the claims is respectfully requested.

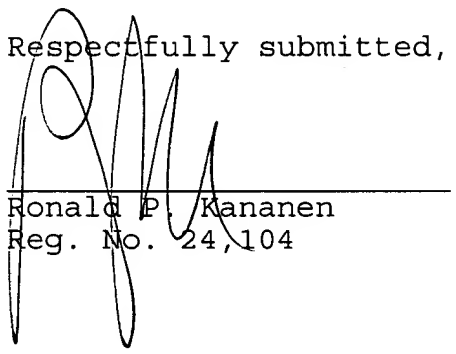
Conclusion

For the foregoing reasons, all the claims now pending in the present application are allowable, and the present application is in condition for allowance. Accordingly, favorable reexamination and reconsideration of the application in light of the amendments and remarks is courteously solicited.

If the Examiner has any comments or suggestions that could

place this application in even better form, the Examiner is requested to telephone Brian K. Dutton, Reg. No. 47,255, at 202-955-8753 or the undersigned attorney at the below-listed number.

Respectfully submitted,



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APPENDIX

IN THE SPECIFICATION

Please replace the paragraph beginning at page 5, line 20 with the following rewritten paragraph.

-- Preferred embodiments of this invention are to be described in detail with reference to the drawings. Figs. 1A and 1B are an example of schematic step charts illustrating a method of manufacturing a thin film semiconductor device according to this invention. At first, as shown in Fig. 1A, a manufacturing substrate 20 having characteristics durable to the process for forming a thin film transistor and a product substrate 1 having characteristics suitable to direct mounting of a thin film transistor are prepared. In the preparatory step, a manufacturing substrate 20, for example, made of an inorganic material, such as glass, and a product substrate 1 made of an organic material, such as plastic, are prepared. In this embodiment, non-alkali glass is used as the manufacturing substrate 20. The heat resistance of the non-alkali glass is about 500(C. The standard thickness for the manufacturing substrate 20 is, for example, 0.7 mm. If it is reduced to 0.5 mm, there is no particular problem in view of the manufacturing process. In this embodiment, non-alkali glass is used but, instead, metal plate, such as of stainless steel, plastic plate,

quartz and the like, can be also be used. On the other hand, for the ~~manufacturing~~product substrate 1, it is necessary to have a heat resistance capable of withstanding the processing temperature of a thin film transistor, and it is necessary that the substrate is thinner and lighter compared with the manufacturing substrate 20. In this embodiment, a plastic material is used with a thickness from about 0.1 mm to 0.5 mm. Particularly, polyether sulfone resin (PES), polyethylene terephthalate resin or ARTON resin of excellent heat resistance is used. The polyether sulfone resin has a heat resistance as high as about 250(C. The plastic film used for the ~~manufacturing~~product substrate 1 may be a single layer and, depending on the case, has a laminate structure. Particularly, when this is used for a reflection type display and not a transmission type display, a metal plate can be used instead of the plastic material. However, when the metal plate is used, the surface has to be insulated. For example, when an aluminum plate is used for the product substrate 1, the surface has to be previously covered with alumina. --

Please replace the paragraph beginning at page 9, line 25 with the following rewritten paragraph.

-- In the embodiment described above, a thin film transistor of the bottom gate structure has been formed on the substrate 1.

Instead, a thin film transistor of a top gate structure may also be integrated and formed. Fig. 3 shows this embodiment. For easy understanding, corresponding reference numerals are attached to those portions corresponding to the previous embodiment shown in Fig. 1 and Fig. 2. As shown in the drawing, in the thin film transistor of the top gate structure, the gate electrode 5 is formed by way of the gate insulation film 4 on the semiconductor thin film 2. In this embodiment, a moisture proof buffer film 30 is formed previously between the product substrate 1 and the thin film transistor. The buffer film 30 comprises a silicon oxide film or a silicon nitride film formed by a CVD or sputtering method, which stops water passing through the ~~manufacturing~~ product substrate 1 and suppresses impurities from intruding into the substrate. In the case of using a plastic material for the product substrate 1, it is sometimes preferred to form a buffer film particularly as a moisture proof countermeasure. --

IN THE CLAIMS

Please cancel claims 1-21 without prejudice or disclaimer of its underlying subject matter.

Please add the following new claims.

22. (new) A thin film semiconductor device comprising:
a product substrate and a thin film device,

wherein a manufacturing substrate is of an inorganic material,

wherein said product substrate is one of an organic material and a metal,

wherein said product substrate has a first side and a second side opposed to said first side,

wherein said manufacturing substrate is adjacent said first side, said manufacturing substrate being closer to said first side than to said second side,

wherein said thin film device is adjacent said second side, said thin film device being closer to said second side than to said first side,

wherein said product substrate is between said thin film device and said manufacturing substrate,

wherein said manufacturing substrate is removed to expose said first side, thereby leaving said product substrate and said thin film device.

23. (new) A thin film semiconductor device as claimed in claim 22, wherein said manufacturing substrate is a glass substrate.

24. (new) A thin film semiconductor device as claimed in claim 22, wherein said thin film device is a thin film transistor.

25. (new) A thin film semiconductor device as claimed in claim 22, wherein said metal is aluminum.

26. (new) A thin film semiconductor device as claimed in claim 22, wherein said organic material is a plastic.

27. (new) A thin film semiconductor device as claimed in claim 26, wherein a moisture-proof buffer film is formed between said second surface and said thin film device.

28. (new) A thin film semiconductor device as claimed in claim 26, wherein said plastic is from the group comprising polyether sulfone resin, polyethylene terephthalate resin and ARTON resin.

29. (new) A thin film semiconductor device as claimed in claim 22, wherein an adhesive layer is formed between said first surface and said manufacturing substrate.

30. (new) A thin film semiconductor device as claimed in claim 29, wherein said adhesive layer is dissolved to remove said manufacturing substrate.

31. (new) A thin film semiconductor device as claimed in claim 29, wherein said adhesive layer is from the group

comprising a polyimide, Teflon resin, silicon, germanium and metal.

32. (new) A liquid crystal display device comprising:

a product substrate and a pixel array,

wherein a manufacturing substrate is of an inorganic material,

wherein said product substrate is one of an organic material and a metal,

wherein said product substrate has a first side and a second side opposed to said first side,

wherein said manufacturing substrate is adjacent said first side, said manufacturing substrate being closer to said first side than to said second side,

wherein said pixel array is adjacent said second side, said pixel array being closer to said second side than to said first side,

wherein said product substrate is between said pixel array and said manufacturing substrate,

wherein said manufacturing substrate is removed to expose said first side, thereby leaving said product substrate and said pixel array.

33. (new) A liquid crystal display device as claimed in claim 32, wherein said manufacturing substrate is a glass substrate.

34. (new) A liquid crystal display device as claimed in claim 32, wherein said metal is aluminum.

35. (new) A liquid crystal display device as claimed in claim 32, wherein said organic material is a plastic.

36. (new) A liquid crystal display device as claimed in claim 35, wherein a moisture-proof buffer film is formed between said second surface and said pixel array.

37. (new) A liquid crystal display device as claimed in claim 35, wherein said plastic is from the group comprising polyether sulfone resin, polyethylene terephthalate resin and ARTON resin.

38. (new) A liquid crystal display device as claimed in claim 32, wherein an adhesive layer is formed between said first surface and said manufacturing substrate.

39. (new) A liquid crystal display device as claimed in claim 38, wherein said adhesive layer is dissolved to remove said manufacturing substrate.

40. (new) A liquid crystal display device as claimed in claim 38, wherein said adhesive layer is from the group comprising a polyimide, Teflon resin, silicon, germanium and metal.

41. (new) A electroluminescence display device comprising:

a product substrate and an electroluminescence device ,

wherein a manufacturing substrate is of an inorganic material,

wherein said product substrate is one of an organic material and a metal,

wherein said product substrate has a first side and a second side opposed to said first side,

wherein said manufacturing substrate is adjacent said first side, said manufacturing substrate being closer to said first side than to said second side,

wherein said electroluminescence device is adjacent said second side, said electroluminescence device being closer to said second side than to said first side,

wherein said product substrate is between said electroluminescence device and said manufacturing substrate,

wherein said manufacturing substrate is removed to expose said first side, thereby leaving said product substrate and said electroluminescence device.

42. (new) A electroluminescence display device as claimed in claim 41, wherein said manufacturing substrate is a glass substrate.

43. (new) A electroluminescence display device as claimed in claim 41, wherein said metal is aluminum.

44. (new) A electroluminescence display device as claimed in claim 41, wherein said organic material is a plastic.

45. (new) A electroluminescence display device as claimed in claim 44, wherein a moisture-proof buffer film is formed between said second surface and said electroluminescence device.

46. (new) A electroluminescence display device as claimed in claim 44, wherein said plastic is from the group comprising polyether sulfone resin, polyethylene terephthalate resin and ARTON resin.

47. (new) A electroluminescence display device as claimed in claim 41, wherein an adhesive layer is formed between said first surface and said manufacturing substrate.

48. (new) A electroluminescence display device as claimed in claim 47, wherein said adhesive layer is dissolved to remove said manufacturing substrate.

49. (new) A electroluminescence display device as claimed in claim 47, wherein said adhesive layer is from the group comprising a polyimide, Teflon resin, silicon, germanium and metal.